

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PCT234/365KH	FOR FURTHER ACTION <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small>	
International application No. PCT/FI 2005/050006	International filing date (day/month/year) 14 January 2005	(Earliest) Priority Date (day/month/year) 15 January 2004
Applicant METSO PAPER, INC. et al.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (see Box No. II)

3. ☐ Unity of invention is lacking (see Box No. III)

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 2005/050006

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: D21F 5/18, D21F 5/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: D21F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
(Y)	US 6442865 B1 (ROBERT WOLF ET AL), 3 Sept 2002 (03.09.2002), column 3, line 46 - line 50; column 8, line 11 - line 16, claims 1,8-10,22, abstract	1-13
(Y)	WO 9856983 A1 (VALMET CORPORATION), 17 December 1998 (17.12.1998), page 17, line 29 - page 18, line 8, figure 12, claims 1,2, abstract	1-13
Y	US 4361466 A (GEORGE H. WONG ET AL), 30 November 1982 (30.11.1982), claim 1, abstract	1-13

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"R" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"G" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

7 April 2005

Date of mailing of the international search report

26-04-2005

Name and mailing address of the ISA/

Swedish Patent Office

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INTERNATIONAL SEARCH REPORT

International application No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5865955 A (HEIKKI ILVESPÄÄ ET AL), 2 February 1999 (02.02.1999), claims 1,15,34, abstract ---	1-13
Y	WO 0236880 A1 (METSO PAPER, INC.), 10 May 2002 (10.05.2002), claim 1, abstract -----	1-13

INTERNATIONAL SEARCH REPORT

Information on patent family members

01/03/2005

International application No.

PCT/FI 2005/050006

US	6442865	B1	03/09/2002	DE	19935138	A	04/05/2000
				DE	50008807	D	00/00/0000
				EP	1072722	A,B	31/01/2001
				SE	1072722	T3	
WO	9856983	A1	17/12/1998	AU	7533098	A	30/12/1998
				DE	19882441	T	11/05/2000
				FI	106806	B	00/00/0000
				FI	972302	A	01/12/1998
				US	6849159	B	01/02/2005
US	4361466	A	30/11/1982	BR	7805815	A	10/07/1979
				CA	1126013	A	22/06/1982
				ES	473783	A	16/04/1979
				GB	1600518	A	14/10/1981
				IT	1099628	B	18/09/1985
				IT	7828228	D	00/00/0000
				JP	54072562	A	11/06/1979
				MX	146218	A	26/05/1982
US	5865955	A	02/02/1999	AT	214758	T	15/04/2002
				BR	9610742	A	13/07/1999
				CA	2233487	A	10/04/1997
				CN	1088482	B,C	31/07/2002
				CN	1198789	A	11/11/1998
				DE	69620020	D,T	22/08/2002
				EP	0868569	A,B	07/10/1998
				SE	0868569	T3	
				FI	102623	B	00/00/0000
				FI	954714	A	05/04/1997
				JP	11512791	T	02/11/1999
				US	6004430	A	21/12/1999
				WO	9713031	A	10/04/1997
WO	0236880	A1	10/05/2002	AU	1406802	A	15/05/2002
				CA	2428105	A	10/05/2002
				CN	1473223	T	04/02/2004
				EP	1337707	A	27/08/2003
				FI	20002429	A	07/05/2002
				JP	2004513254	T	30/04/2004
				US	20040049940	A	18/03/2004

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

Kespat Oy
P.O. Box 601
FI-40101 Jyväskylä
Finland

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

26-04-2005

Applicant's or agent's file reference

PCT234/365KH

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/FI 2005/050006

International filing date (day/month/year)

14.01.2005

Priority date (day/month/year)

15.01.2004

International Patent Classification (IPC) or both national classification and IPC

D21F 5/18, D21F 5/04

Applicant

METSO PAPER INC. et al.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further opinions, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/FT 2005/050006

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language, _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/FI 2005/050006

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-13	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-13	NO
Industrial applicability (IA)	Claims	1-13	YES
	Claims		NO

2. Citations and explanations:

The object of the invention concerns an arrangement including a preimpingement dryer and a vertical impingement dryer placed between the press section and the first drying cylinder in the drying section in a paper machine.

The following documents are cited in the International Search Report:

D1: US 6442865 B1
D2: WO 9856983 A1
D3: WO 0236880 A1

D1 reveals a drying section including a plurality of impingement dryers positioned in front of a drying group containing a number of drying cylinders. At least two impingement dryers are positioned on different sides of the material web. (See abstract; column 3, lines 46-50; column 8, lines 11-16 and claim 1, 8-10, 22.)

D2 shows a drying section including two vertical impingement drying units (11a1, 11a2) positioned before a group of drying cylinders (K1, K2, K2, K4). (See abstract; page 17, line 29 - page 18, line 8; fig 12 and claims 1, 2.)

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of V

D3 describes an impingement drying unit for a drying section. The impingement unit is extending at least partly above or below a horizontal plane which passes through the uppermost or lowermost drying cylinder. (See abstract and claim 1.)

D1 represents the most relevant prior art.

The impingement dryer, according to D1, includes a number of impingement dryers, where the first dryer corresponds to the preimpingement dryer in the invention according to claim 1. The invention according to claims 1 differs from D1 by the fact that the second impingement dryer is a vertical unit.

However, vertical impingement units are known in the art (See D2 or D3) and it is considered obvious to a person skilled in the art that a vertical impingement unit according to D3 can be used in a drying section according to D1.

Consequently, claim 1 lacks an inventive step.

Dependent claims 2-13 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, involve an inventive step, since said features come within the scope of the customary practice followed by persons skilled in the art.

Accordingly, claims 2-13 lack an inventive step.

In light of the arguments stated above, the invention according to claims 1-13 is not considered to involve an inventive step.